

TACOMA POWER CUSHMAN NO. 2 DAM FLOATING DRUM SPILLWAY GATE PAINTING



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AGENDA

- TACOMA POWER'S PROJECTS
- CUSHMAN PROJECT
- OVERVIEW OF DRUM GATE PAINTING PROJECT
- PHOTOS
- LESSONS LEARNED
- QUESTIONS

PROJECT LOCATIONS





CUSHMAN PROJECT

➤ CUSHMAN NO. 1 DAM

- Year Constructed: 1926
- Height: 275 feet
- Width: 1,111 feet
- Reservoir Length: 9.6 miles
- Reservoir Volume: 453,350 ac-ft






CUSHMAN PROJECT

➤ CUSHMAN NO. 2 DAM

- Year Constructed: 1930
- Height: 235 feet
- Width: 575 feet
- Reservoir Length: 2 miles
- Reservoir Volume: 8,000 ac-ft





CUSHMAN NO. 2 DRUM GATES

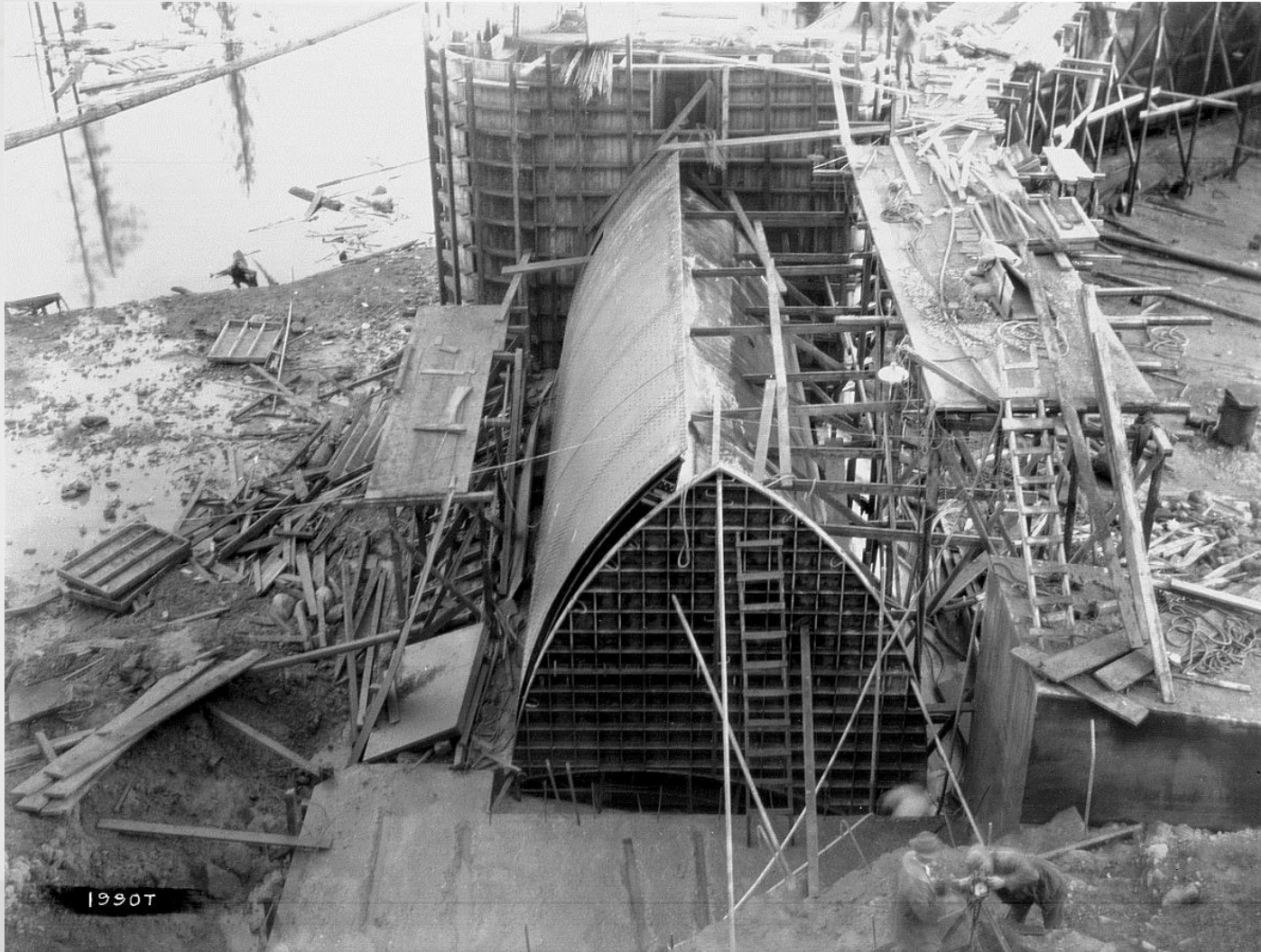
➤ DRUM GATES

- Number of Gates: 3
- Length: 40 feet
- Height: 19 feet
- Width: 15.7 feet
- Weight: 100,000 pounds





CUSHMAN NO. 2 DRUM GATES



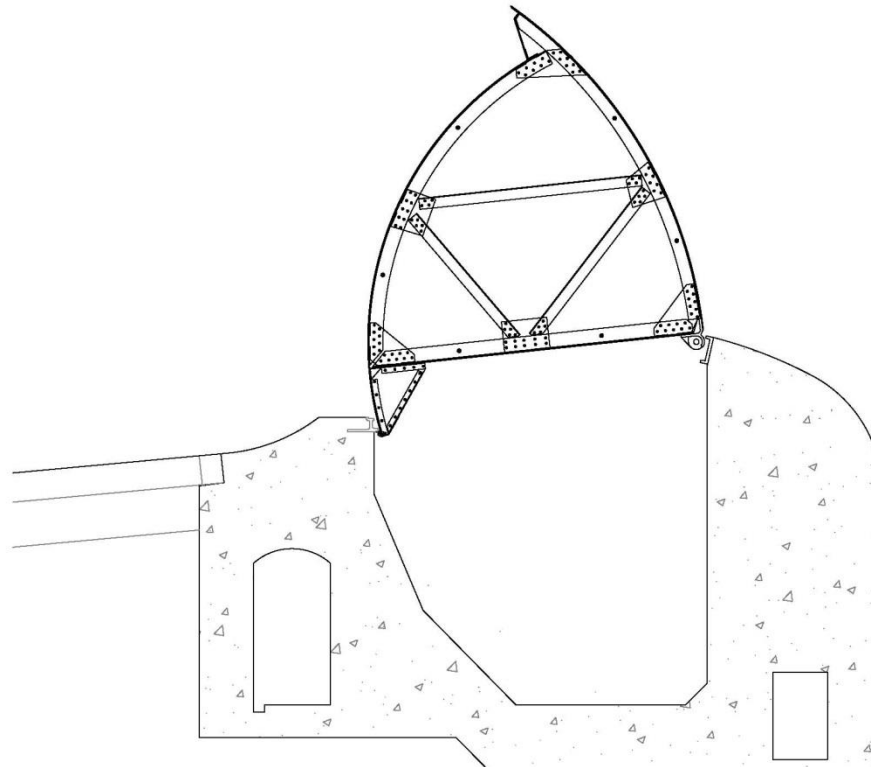


CUSHMAN NO. 2 DRUM GATES

- **HOW DO WE REPAINT THE END PLATES OF DRUMS?**
 - **9-inches of Clearance to Piers**

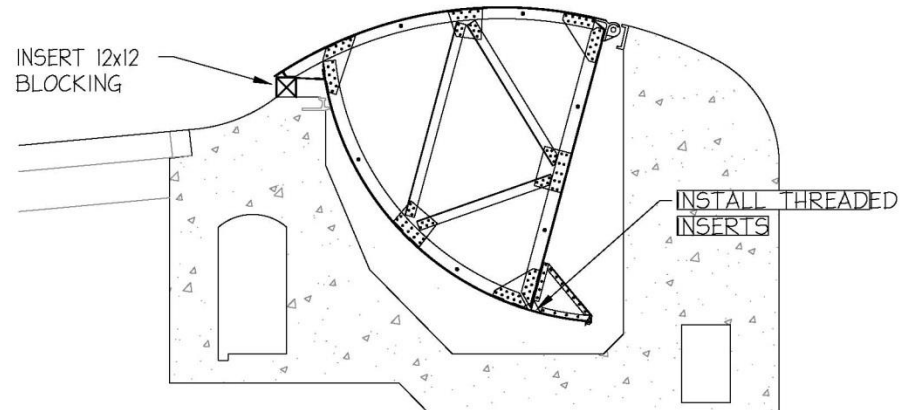
- **TWO VIABLE OPTIONS**
 - **Lift the Gates Up Above the Piers**
 - **Roll the Gates Out on to the Spillway Apron**

CUSHMAN NO. 2 DRUM GATES



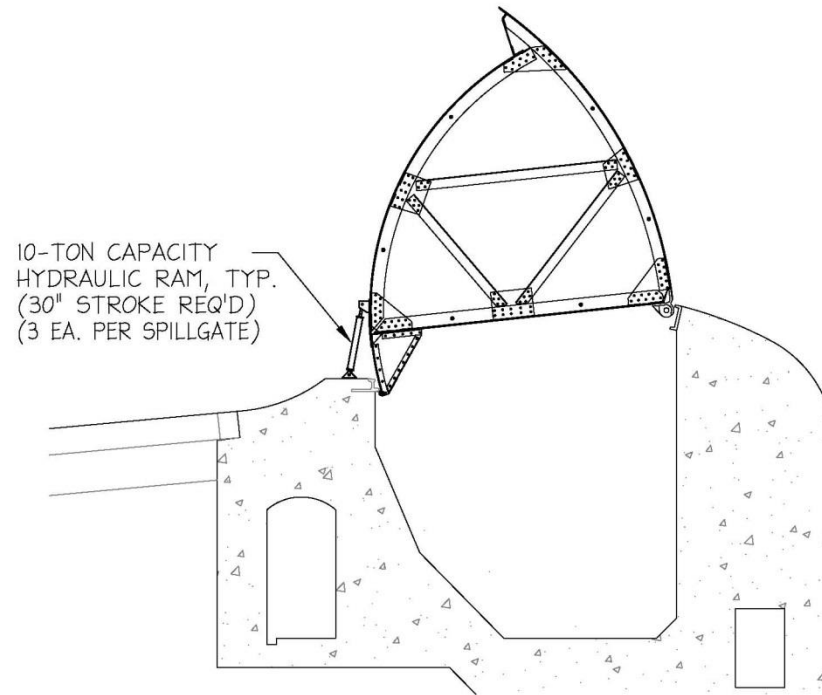
'NORMAL-UP' POSITION

CUSHMAN NO. 2 DRUM GATES



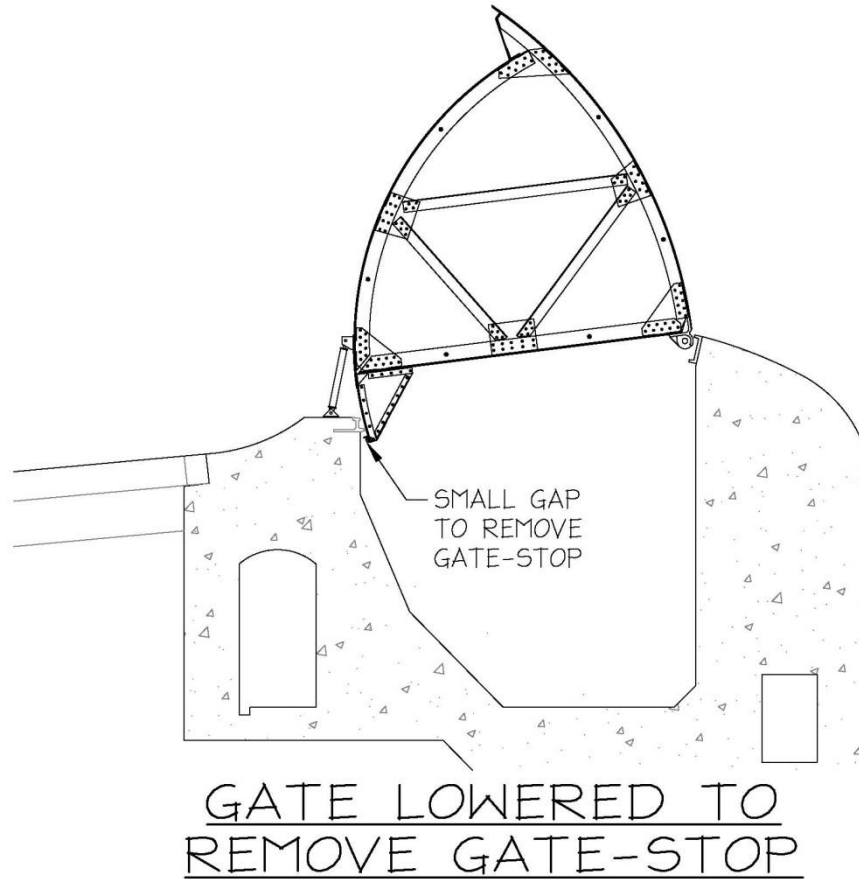
'INITIAL-DOWN' POSITION

CUSHMAN NO. 2 DRUM GATES

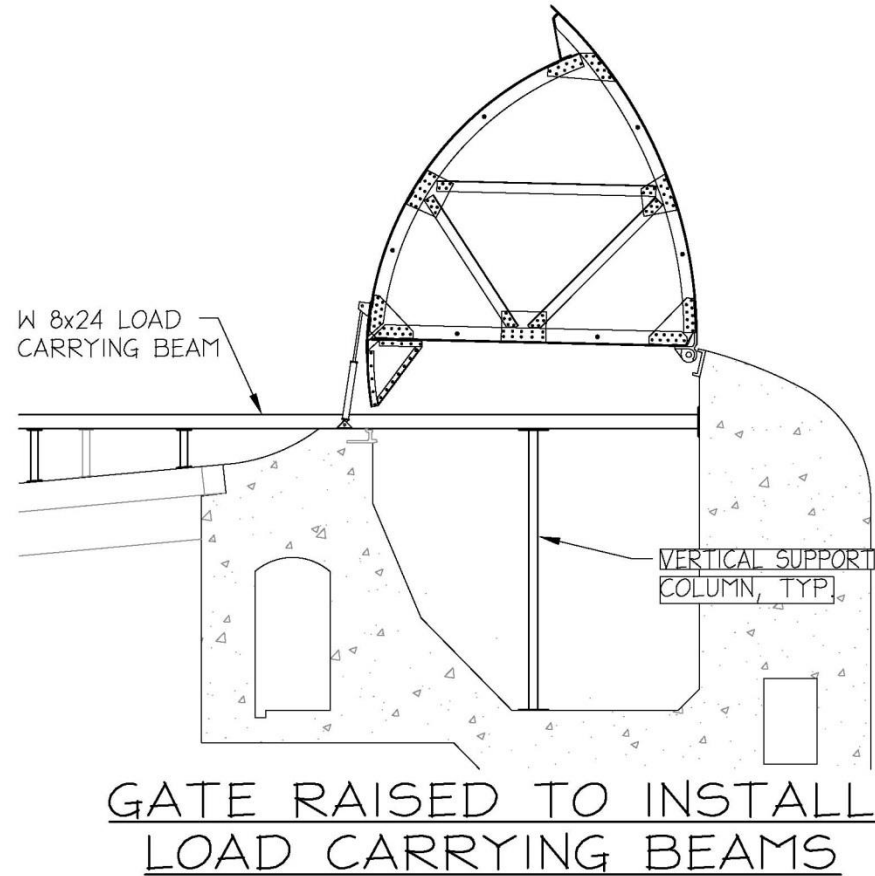


HYDRAULIC RAM INSTALLATION

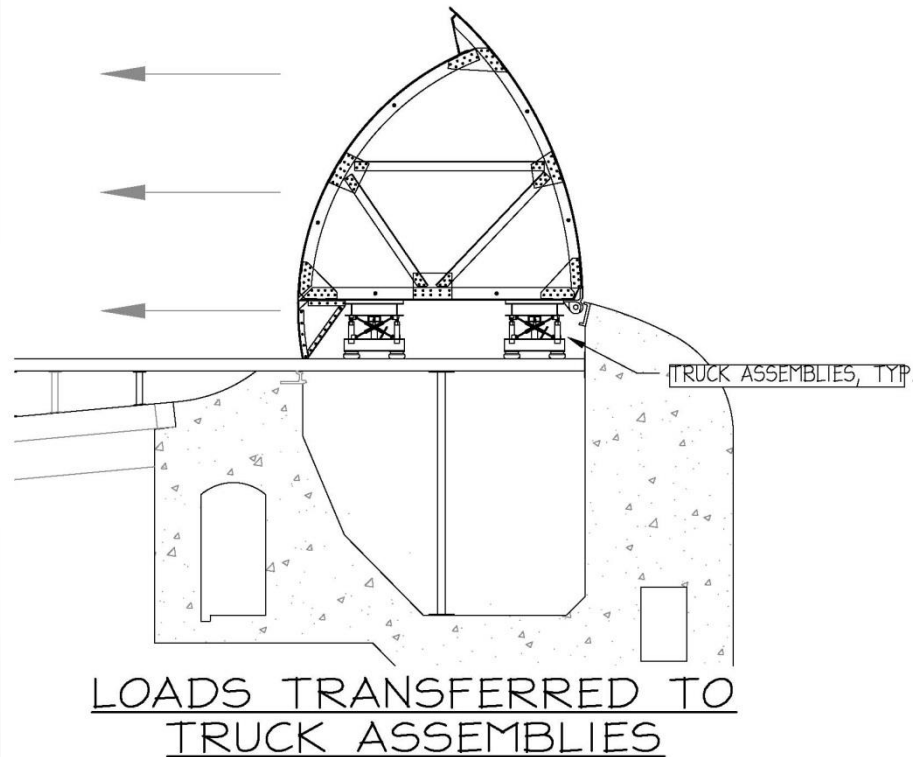
CUSHMAN NO. 2 DRUM GATES



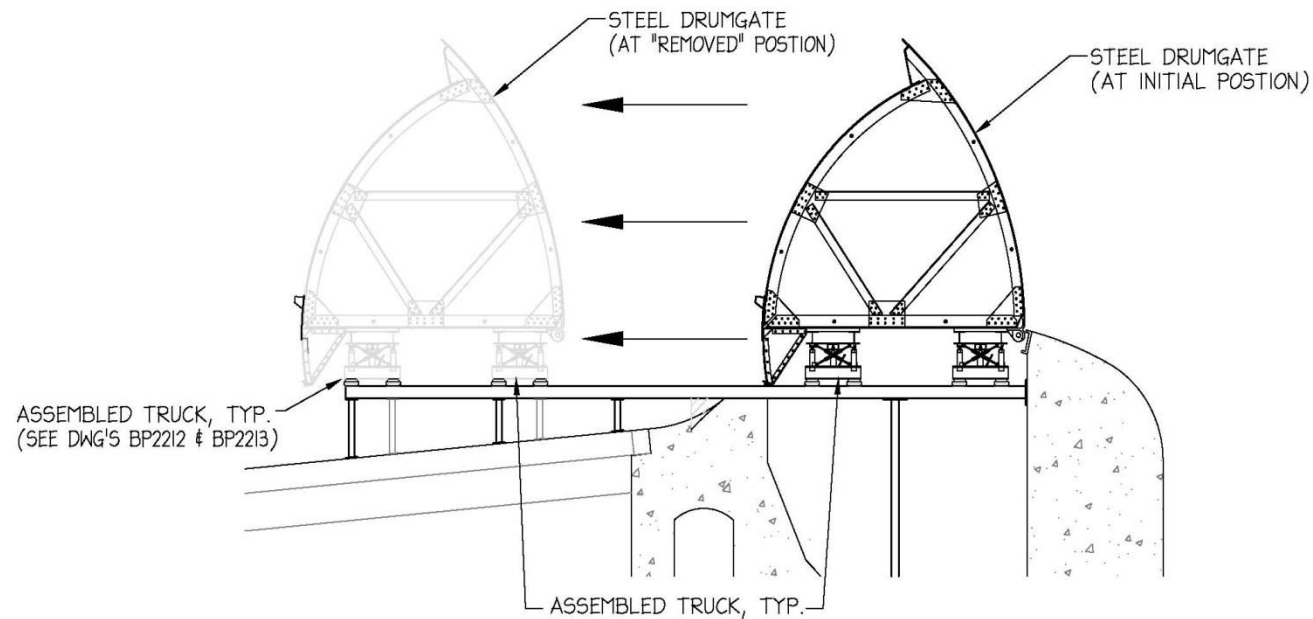
CUSHMAN NO. 2 DRUM GATES




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CUSHMAN NO. 2 DRUM GATES



CONCEPTUAL DIAGRAM
NOT TO SCALE



CUSHMAN NO. 2 DRUM GATES





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➤ LESSONS LEARNED

- Include Stripe Coat of Paint Around Rivet Heads and Seams
- Install Cathodic Protection Anodes if Possible
- MC-Tar Is Not UV Stable
- Side and Corner Seals Continue to Leak
- Document and Retain Maintenance Plans for the Future
- Plan for Future Maintenance in the Initial Designs

QUESTIONS?

